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Parenting the Brain

Neuroscience first became prominent in the discussion of child development in the mid 1990's. The then new techniques of functional Magnetic Resonance Imaging (fMRI) allowed neuroscientists to observe the brain as never before. One of the most exciting discoveries had to do with the way the human brain develops in childhood. The brains of young children, they discovered, are at least twice as active as those of adults, growing from 2,500 synapses for each neuron in the cerebral cortex at birth, to as many as 15,000 synapses per neuron by age of three. Perhaps even more intriguing, the numbers of synapses begin to "prune back" as brain function becomes more specialized.

For many it seemed to confirm psychological research suggesting IQ might be improved through the quality of the interactions between children and their parents in the early years. By subjecting children to especially diverse, high quality interactions early in life, it was believed that they would retain more synaptic connections after age 3, thus making them more intelligent.

It's easy to see why it was a compelling idea. It seemed to offer an explanation as to why longitudinal studies of children who had participated in the Perry Preschool Project and Head Start did so much better than peers who hadn't. It was also a godsend to advocates of early childhood education who struggled to maintain and extend their services, particularly through the Reagan years.

The idea that early interactions could mould the brain caught the attention of the public and policy-makers alike and started a sort of mania for educational toys for infants. Playing classical music to increase IQ was particularly popular. Parents bought musical toys and Baby Einstein tapes in an effort to preserve early brain development and thus make their children smarter.

It was simple, it was cheap and it was pleasant. Zell Miller, the governor of Georgia even went so far as to pledge "to deliver the first cassettes and CDs of classical music...to every newborn", "No one questions", he said "that listening to music at a very early age affects the spatial, temporal reasoning that underlies math and engineering and even chess...Having that infant listen to soothing music helps those trillions of brain connections to develop."

Others emphasized the importance of parenting for brain development. The hugely influential "I Am Your Child" campaign, run by actor turned film director Rob Reiner, produced a series of documentaries containing information about parenting and brain development. Narrated by celebrities and politicians including the Clintons, Mel Brooks, Tom Hanks, and Jamie Lee Curtis, the campaign informed parents that "the first years last forever" and that, in Reiner's words, "whether or not a child becomes a toxic or non-toxic member of society is largely determined by...his experiences with his parents and primary caregivers in those first three years."

The Science of Wishful Thinking

The amazing claims that extra stimulation could enhance IQ by preserving extra synapses beyond age 3 were as wildly optimistic as they were incorrect. Some neuroscientists welcomed the interest in their field, but Dr. John Bruer, president of the James S. McDonnell Foundation (whose brief is to offer research grants for cognitive science) reacted with alarm. In the face of a burgeoning obsession with neuroscience, he wrote a withering critique of the 0-3 theories of brain development. His book 'The Myth of the First Three Years' showed that contrary to claims that the years of 0-3 constitute a critical, all-or-nothing opportunity to increase children's intelligence, neuroscience and behavioral research actually hint at precisely the opposite conclusion: brain plasticity lasts throughout life.

Not only are educational toys and classical music unnecessary for healthy brain development he argued, there is no evidence to support the idea that any particular style of parent/child interaction is better for

children's brains than any other. The pruning back of synaptic connections happens regardless of how we interact with children and is a normal part of brain development. Therefore it is also wrong to suggest that people with a higher density of synaptic connections are more intelligent. The opposite appears likely. A high density of synaptic connections after age 3 is strongly associated with disorders like Fragile X syndrome, the second most common form of mental retardation.

"Brain science", he concluded, "even if we add in behavioral science, cannot tell us how to raise a scientifically correct child. Parents should realize that children thrive in a wide variety of physical and cultural environments and learn and benefit from experiences throughout their lives."

The Myth Endures

The popular fascination with early brain development persists in spite of high profile challenges like Bruer's. Even the notorious Baby Einstein class action suit in which its creators were forced to admit that using their products does not make babies more intelligent has done little to dampen the enthusiasm for neuroscience.

Nearly twenty years on, there have been no startling breakthroughs in the field of behavior neuroscience and yet the brain continues to be the star attraction at every discussion of child policy, education and parenting. A careful reading of papers emanating from institutions like the Harvard Center on the Developing Child, one of the most enthusiastic promoters of brain-friendly child policy, shows that the bulk of the research into child development comes from disciplines other than neuroscience. The conclusions they draw about children's brain architecture and the policy recommendations that flow from them are speculative at best.

Although it is tempting to look at the studies from neuroscience, psychology and the economic analysis of early childhood programs and draw conclusions about how adults should behave with young children, the mere presence of evidence in one area does not necessarily imply a causal relationship between evidence in any other. The most neuroscience can offer us at the present time is insight into the biological mechanisms at work in early brain development. Their relationship to particular outcomes is far from straightforward. The unfortunate effect of the over-stretching of neuroscientific discoveries is to reduce childhood development to technical matters of timing and neurological mechanisms.

Why Brain Science?

I believe the current vogue for neuro-centric early childhood policy has less to do with the research itself than with a tendency to reduce social phenomena to the level of individual behavior. Crafting policy on the basis of what is good for children's brains may have no affect on brain function or IQ, but it has a profound effect on the way we look at child-rearing in general, transforming the parent/child relationship into a series of interactions that are important to the brain. Not only does this strip human relationships of their complexity but it tends to reduce or shut down the scope for the individual potential of older children and adults.

Whatever the flaws of the social reformers of the '60's, their starting point was one of an expansive human potential. Today we tend to look at human potential as limited and conditional. If it is deterministically limited by what happens in early childhood, then the development of the adult individual ultimately depends on parents' ability to create the conditions for them to reach that potential. In this scenario the individual child, their hopes, their aspirations, and their unique qualities recede as do other factors such as the impact of their relationships with their peers, with other adults and with their community. They are reduced to not much more than an extension of the way they are parented - a situation that is unfair for children and parents alike.